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PEACH CULTIVAR TRIAL

1996 TO 2000

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Final Report

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Introduction

Consumer demand for Ohio grown peaches has been strong due to the exceptional flavor and farm market appeal. There is a strong desire among commercial growers and home gardeners to plant peach trees for the distinct local flavor that may not be obtained elsewhere. In 2000, Ohio growers produced 4.259 million pounds of peaches and received $0.468 per pound which was 12% higher than in 1998. The average U.S. farm price in 2000 was $0.196 per pound (6). However, successful yellow free stone peach production in Ohio has been affected by low winter temperatures which damage shoots and trunks, and spring frosts during bloom. Severe winter temperatures in the early 1980's discouraged new plantings.

Growers have learned to select orchard sites where winter temperatures are modified as near Lake Erie or hillsides in southern Ohio. The Redhaven peach cultivar has been listed in the 1975 and 1987 Ohio surveys as the most planted peach cultivar in Ohio. Research at Ohio State University has centered around tree survival and late blooming cultivars (4).

Cultivar Descriptions (1)

Jerseydawn [Solo x (Jerseyland x Mayflower) = NJ246]. Jerseydawn was introduced in 1984 at the New Jersey Agricultural Experiment Station by S.A. Mehlenbacher, L.F. Hough and C.H. Bailey. It has 40 to 70% red blush on a dull yellow ground color and is semi-freestone. Flowers are large and pink. It blooms 1 to 3 days after Elberta. The leaves and fruit are resistant to bacterial spot. In 1996, Jerseydawn was described in Massachusetts as a very popular, early ripening fruit with good size, excellent flavor and about 20% had split pits (5).

Redhaven (Halehaven x Kalhaven). Redhaven was introduced in 1940 by Stanley Johnson at the Michigan Agricultural Experiment Station. It has round, medium sized fruit, with red to deep red skin color. It is a firm good quality fruit which ships very well. The trees are very productive, nearly always requiring fruit thinning, and have a chilling requirement of 950 hours.

Redhaven, the most widely planted peach cultivar in Ohio during the cold winters of the 1980's, survived well but yields were considered to be low (4). The average date of full bloom is April 19. It blooms before Reliance in central Ohio (4).

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Beekman's origin and performance elsewhere is not well known. It is listed as ripening in mid August with good color and firmness, large size, good winter hardiness, but somewhat susceptible to bacterial spot.

Som-Mor (Chance seedling originated in Woodvine, VA as plant patent 6828 in 1989). The fruit, large with 75% red blush over yellow ground color, is firm and freestone. It ripens with and is similar to Rio Oso Gem. The buds have above average cold hardiness and frost tolerance. It is somewhat brown rot tolerant.

Methods

Four peach (Prunus persica L. Batsch) cultivars on standard rootstocks were planted in a well drained silt loam soil at the Ohio State University (OSU) Waterman Laboratory in Columbus, Ohio. In order of ripening, five tree (five replicates) each of Jerseydawn, Redhaven, Beekman and Som-Mor were planted in 1993. Additional Redhaven trees were planted at the end of the rows as border trees. All fruit are considered to be yellow flesh and semi-freestone to freestone types.

Pre-plant applications of potassium were applied. Trees were auger planted in a silt loam soil. The trees were dormant pruned immediately after planting and each year thereafter. Trees were summer pruned on or about August 1 in each year from 1996. Nitrogen was applied each year, according to Cahoon (2). In January 1994, trees were subjected to -23^0F and showed some internal damage. All survived and grew rapidly after pruning and receiving nitrogen fertilizer in 1994. The trees produced their first crop in 1995 and data were collected each year through 2000 when the plots were terminated. A few trees had only one or two limbs separate from the trunk in 1996 which could have been due to the 1994 cold and a large crop in 1996. Trees were not irrigated except during the 1999 drought which began in April and was the most prolonged drought since 1988. On August 10 and 17, 1999 the entire plot was irrigated with a total of 3.7 inches of water.

Fruits were hand thinned at the hard pit stage each year as needed. Fruits were harvested at the firm ripe stage. Dropped fruit were not weighed or counted. Standard pesticide sprays as recommended were applied to reduce insects, diseases and weeds (3). In general, fruits were not greatly affected by pests, hail, birds, or severe weather after 1994. Following warm winters, the springs of 1998, 1999, and 2000 had blooms 14 to 16 days earlier than previous trials (4). Blooms were not damaged by frost.

Results

Jerseydawn trees had the highest average number of fruit for the six years of testing (Table 1). It had larger fruit and was earlier in ripening than Redhaven, particularly in the last three years of the trial.

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Redhaven produced more fruit and total yield per tree than Beekman or Som-Mor (Table 1). It had the smallest fruit size of all cultivars throughout the trial period. However, it had more fruit per tree than Beekman or Som-Mor.

In the last three years, Beekman had the largest fruit. Its fruit ripened as Redhaven harvest ended (Table 1). Som-Mor had the lowest number of fruit per tree, and the lowest yield of all cultivars. In general, the fruit color (30 to 60% red blush) of Som-Mor was lower than that of any other cultivar (data not shown). However allowing the fruit to ripen on the tree after final fruit swell provided more yellow background color rather than a green background.

Discussion

Jerseydawn has performed very well in Columbus under favorable weather conditions. The yield of Jerseydawn compares to that of Reliance, but has a larger fruit size (4). It deserves to be considered as a peach of good yield and good fruit size which ripens before Redhaven for the Columbus area. However, the average total six year yields of Redhaven were slightly below those of Jerseydawn in this trial. It should be noted that Redhaven trees showed poor shoot growth in March 1999, were affected by severe summer drought, and have a tendency to have more fruit per tree than other cultivars. This could have affected the overall performance of Redhaven in this trial. Redhaven remains an excellent cultivar for yield, size and skin color (4).

Beekman and Som-Mor did not perform as well as the other cultivars. Beekman could be considered for home gardens for fruit ripening after Redhaven. Som-Mor does not perform well for the home garden.

Conclusions

Jerseydawn and Redhaven peach cultivars on standard rootstocks show promise in the Columbus area under warm winter and spring temperatures. Beekman could be an attractive good quality peach for home gardens. Som-Mor should not be considered for either commercial or home production.

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References

1. ASHS Press. 1997. The Brooks and Olmo register of new fruit and nut varieties. Alexandria, VA. 22313 p. 405-516.

2. Cahoon, G.A. 1998. Fertilizing Fruit Crops. OSU Extension Bulletin 458. p. 19.

3. Funt, R.C., M.A. Ellis, C. Welty, R.N. Williams. 1994. Ohio Commercial Small Fruit and Grape Spray Guide. OSU Extension Bulletin 506a. p. 1-46.

4. Funt, R.C., M.C. Schmittgen, and J.C. Golden. 1991. Performance of peach cultivars and rootstocks in central Ohio. Hort. Series 612 p. 1-5.

5. Hauschild, K.I. 1997. Peach cultivar trials: observations and comments. Fruit Notes 62(l):17-18.

6. United State Department of Agriculture. 2001. Non-citrus fruits and nuts 2000 preliminary summary. National Agric. Statistic Service. P. 52-53.

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Table 1. Average total pounds and number of fruit per tree and pounds per fruit for six years (1995-2000) and last three years (1998-2000), average fruit harvest and last harvest date of four peach cultivars on standard rootstocks planted in 1993, Waterman Laboratory, Columbus 1995 - 2000.

	Avg/tree (1995-2000)			Avg/tree (1998-2000)			Avg. Date Harvested[y]	
Cultivar	Total lbs[z]	# Fruit	Lbs/Fruit	Total lbs[z]	# Fruit	Lbs/fruit	First	Last
Jerseydawn	79.9	239.6	0.35	130.0	393.6	0.38	7/19	7/29
Redhaven	70.8	250.6	0.31	102.1	361.1	0.32	7/29	8/8
Beekman	52.8	136.6	0.37	81.6	197.2	0.45	8/7	8/11
Som-Mor	37.3	104.3	0.38	42.7	120.9	0.37	9/1	9/13

[y]Avg. harvest date for 1995 to 2000 - From 1998 to 2000 bloom and harvest dates were earlier than previous 10 to 15 years.
[z]To convert to pounds per acre with 16' x 22' spacing, multiply pounds per tree times 123 trees per acre.

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